

Heart of Darkness

The co-creative role of receptive space in the formation of natural gradients

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It is widely recognised that for there to be any kind of flow, there needs to be some kind of gradient between somewhere at high pressure and somewhere at a lower pressure. But it is less clear how, fundamentally, such gradients can arise and be sustained naturally through gravitational influence. This is because the certainty-seeking thinking of conventional objectivist logic, science and mathematics *prevents* consideration of the role in natural phenomena of any kind of presence that cannot be definitively quantified because it is intangible. This thinking *requires* either a discrete *boundary limit* or gravitational force to restrain and confine energy within a completely closed and hence predictable system. There is, however, no evidence that Nature *is* a completely closed, fully predictable system. Moreover, if it were so it is difficult to imagine how there could be any movement within it or what would reside at its limit other than a paradoxical blank wall. As Ludwig Wittgenstein put it:

“This space I can imagine empty, but I cannot imagine the thing without the space”

In reality, it makes no sense to discount or subsume the intangible presence of space from or within the tangible presence of energy or *vice versa*. Tangible presence alone could amount to no more than a purely abstract, dimensionless ‘point’, lacking size or shape. Intangible presence alone or entirely conflated with tangible presence would be formless. But this discounting of one from the other, or conflation of one with the other, is *exactly*

what objectivistic thought requires in its quest for absolute predictive power: matter purified from or overlorded space.

It is at odds with the scientific quest for truth to ignore or regard as irrelevant a kind of presence that by its very nature lacks tangible resistance to the excitable surfaces of our sense organs and detection screens, just because we don't currently have the practical or conceptual tools to handle its uncertain implications. So too is the abstract imposition of unknown and unknowable conditions in order to sustain prescriptive assumptions for which there is no consistent evidence and that don't make consistent sense. These practices leave science stranded in its own objectivist self-reference frame, unable to contribute to deeper human understanding at a time of environmental, social and psychological crisis, and vulnerable to the prejudicial influence of financial and political power. Worse, they lead to deep paradox and serve to reify an erroneous worldview that aggravates human conflict, suffering and misunderstanding. As Michael Polyani (1958) put it:

“For once men have been made to realize the crippling mutilations imposed by an objectivist framework – once the veil of ambiguities covering up these mutilations has been definitely dissolved – many fresh minds will turn to the task of reinterpreting the world as it is, and as it then once more will be seen to be.”

To escape the objectivist trap, there is a need for scientists to be prepared to loosen up the constraints imposed by discrete boundary logic and engage with Nature *as it is*, not as they might presuppose or desire it to be. Science needs once more to become an Art, as in the Renaissance, prepared *honestly* and *imaginatively* to question, reconsider and where apt reconfigure its deepest assumptions. It needs to recognise both *explicit* evidence for the occurrence of *tangible* (i.e. resistive) presence and *implicit* evidence for the occurrence of intangible (i.e. non-resistive) presence. At the very least it needs to recognise where it is restricting its own development through seeking complete objective predictability. In so doing it could allow less prescriptive approaches – akin to those used in some remarkably prescient works of ‘science fiction’, for example – actually to help

imaginatively to foresee and prepare more realistically for uncertain future possibilities. This more open kind of enquiry has been the intention of the approach of ‘natural inclusionality’ (Rayner 2004, 2006, 2010a, 2010b, 2011). At its heart is due consideration of the vital role of intangible presence in co-creative, indeterminate (i.e. fluidly bounded) cosmological, planetary and biological evolutionary processes.

The intangible presence recognised by the natural inclusional approach to be vital to the possibility of forming natural gradients is indeed no more and no less than *space* – but not space in the objectivistic sense. Pressure, seen from an objectivistic viewpoint as force per unit area, varies with the tangible content of space confined by some limit or force. For example, the pressure of a volume of gas *within a container* increases with its density and what is thought of as *a vacuum* has zero pressure. But the role of space *per se* as *the unlimited source of zero pressure*, the lack of resistive influence in an *uncontained* cosmos, remains unconsidered. The objectivistic treatment of space as an ‘absence of tangible presence’ and resultant attribution of pressure solely to the *positive* presence of ‘substance’, such that gradients arise from varying only the *content* of a *defined volume*, relegates space to serving merely as an ‘empty’ and ‘passive’ background.

The deep significance of space as *intangible presence* only becomes clear when it is recognised *implicitly* that such presence, by its very nature, *cannot be cut, confined, excluded or occupied* by tangible boundaries as *discrete limits*. Such truly infinite, *limitless presence* can only be *configured* by tangible boundaries into *distinct localities*, NOT *definitively bounded* by them into *discrete locations* (Rayner 2004, 2006, 2010 a, 2010 b, 2011).

The objectivist difficulty in recognising this fact is illustrated by the following statement:

“When a smaller box *s* is situated, relatively at rest, inside the hollow space of a larger box *S*, then the hollow space of *s* is a part of the hollow space of *S*, and the same “space”, which contains both of them, belongs to each of the boxes. When *s* is in motion with

respect to S , however, the concept is less simple. One is then inclined to think that s encloses always the same space, but a variable part of the space S . It then becomes necessary to apportion to each box its particular space, not thought of as bounded, and to assume that these two spaces are in motion with respect to each other.” (Einstein, 1954).

Here is clearly portrayed the objectivist assumption that space can be subdivided into discrete parts of *a* discrete whole. According to the logic of *natural inclusionality*, (Rayner 2004, 2006, 2010 a, 2010 b, 2011), this premise is FALSE: space *cannot be pluralized* into *discrete particularities*, it can only be distinguished into distinct, dynamically and permeably bounded regions.

Einstein’s assumption is, however, deeply embedded in the objectivist ‘Law of the Excluded Middle’ (see for example, Valsiner, 2009). This Law underpins the oppositional definition of both propositional and dialectic argument, and the discontinuity between space and matter in the core of conventional number theory and both Euclidean and non-Euclidean geometries (see below). According to this Law, one thing cannot be another thing (or, more formally, if A then not $\text{non}A$).

As recognised by Henri Poincaré, the apparent scientific *obligation* to make this definitive assumption comes from the fact that it allows structure, or space conflated with structure, to be *linearized* into discrete and identical units that can be added, subtracted, multiplied and divided according to the rules of simple arithmetic. ‘Space,’ he stated (Poincaré, 1905 – the following is a complex quotation gathered from different parts of his treatise), ‘is another framework we impose upon the world . . . here the mind may affirm because it lays down its own laws; but let us clearly understand that while these laws are imposed on *our* science, which otherwise could not exist, they are not imposed on Nature.....Euclidian geometry is . . . the simplest, . . . just as the polynomial of the first degree is simpler than a polynomial of the second degree. . . . the space revealed to us by our senses is absolutely different from the space of geometry.’

The *problem* here is that this sense of obligation comes at the colossal expense of not representing natural form in a realistic way. Most particularly, this is because a unit of matter is equated with a dimensionless point that is independent from all other such points and yet is treated as the fundamental atomic ‘building block’ from which all structure is constructed or that all structure is deconstructed into.

Here it may be recalled that Euclidean geometry is the abstract geometry of zero-dimensional (size-less) points, one-dimensional (width-less) lines, two-dimensional (depthless) planes and three-dimensional solids (self-contained volumes) that underpins both classical and modern mathematics. Its figures are used to represent definitive tangible structure and yet can only *actually* represent the intangible presence in the core of tangible form because *it is impossible to reach zero without removing the tangible presence*. The same applies to the so-called ‘non-Euclidean’, Riemannian and Lobachevskian geometries of curved surfaces.

The scientifically inconvenient truth is hence that abstract Euclidian and non-Euclidean points, lines and planes/curved surfaces can consist *only* of intangible presence, NOT tangible presence. Ironical, isn’t it? By the same token, it is impossible to drive or rotate a solid body from or around a solid fixed centre. The central ‘still’ point, axis or plane of symmetry of any bodily form can only consist of intangible presence, with correspondingly zero pressure.

In effect, conventional mathematics and its discontinuous underpinning logic thereby treat ‘1’, as a unit of tangible presence’, as if it is ‘0’, a vanishing point of intangible presence. They literally attempt to construct ‘one thing from nothing’ and then to sum an infinite number of these one things up into an infinite ‘whole’ as a ‘one’ that is also ‘many’, whilst discounting the very presence that truly is infinite, at all scales.

This difficulty can only be resolved realistically by accepting that in Nature, tangible and intangible presences are *distinct but mutually inclusive*. This is the point recognized by the fluid geometry of natural inclusionality. Here, space and boundaries are regarded as

mutually inclusive sources of continuity and dynamic distinction with variable connectivity, not *mutually exclusive* sources of discontinuity and discrete definition, as in Euclidean and non-Euclidean geometries. So far, the only mathematical formulation explicitly to accept and incorporate this natural inclusion of nonlocal space in and throughout local figural form is the ‘transfigural mathematics’ introduced in 1985 by Lere Shakunle (see, e.g. Shakunle, 1994; Shakunle & Rayner, 2008, 2009). As yet, this formulation does not, however, adequately recognise the variable connectivity of tangible boundaries as energetic interfacing between inner and outer realms and so obviates the occurrence and fluidly variable relationship of distinctive bodily forms.

Natural inclusionality effectively transforms the *solid frameworks* of Euclidean and non-Euclidean geometries into *fluid framings* of *omnipresent, non-local* intangible space *everywhere, within* (intra-), *throughout* (trans-), *between* (inter-) and *beyond* (extra-) local tangible energetic form (cf. Shakunle & Rayner, 2009). This opens the possibility of a dynamic, co-creative, mutually inclusive relationship between internally and externally situated non-resistive (and hence *receptive*) intangible presence and locally situated, energetic tangible presence.

Correspondingly, it becomes possible to visualize (as symbolized in Fig. 1) how both pressure and pressure gradients can arise in energetically open systems due to the relative connectivity and resistivity of tangible energetic presence, as a source of pressure, in dynamic relationship with limitless intangible presence, as a source of zero pressure. The situation is like that in the midst of a hurricane or cyclone, where an intangible centre of receptive influence and stillness (referred to in transfigural mathematics as a ‘*zeroid*’ or ‘zero identity’; e.g. Shakunle, 1994) forms an ‘eye’, or indeed an ‘I’, as a ‘zero’. Tangible presence orients circumferentially *around* this centre (it cannot itself reach this centre), balancing the tensions within and without as an *acquisitive* energetic interfacing; in effect ‘wanting’ what it cannot have. This energetic interfacing feeds towards and around its ‘hungry’, dark, ‘cavity at heart’. Its surface expanse is constrained by the availability and packaging of energy in massy (bodily) or radiant (electromagnetic) flow form. Its acquisitive influence, arising via tangible encapsulation of a point, line, hollow or plane

of zero pressure manifests in what have been called ‘inductive fields’, but might more aptly be called ‘pools of spatial influence’ (cf. Rayner & Tattersall, 2010).



Fig. 1. ‘Holding Openness’ (Oil painting on canvas by Alan Rayner, 2005). Connective, acquisitive, tangible energetic presence feeds towards and around an intangible centre of darkness, whose receptive influence reaches inwardly and outwardly through cavernous luminous channels within, throughout and beyond the surface of natural flow-form. The dynamic boundary of this flow-form is freely permeable to space, as intangible presence, but not to tangible presence, which it assimilates or deflects to variable extents, depending on its configuration.

Every body, in other words, can be thought of as an inductive *attractor*, attractive to and attracted by every other body. Its attractive influence arises from its intangible centre as a ‘zero-point origin of circulation’ and is mediated through and counter-balanced by the

variably resistive, fluid configuration of its dynamic interfacial boundary in a limitless pool of intangible presence (i.e. of space). This provides a possible physical basis for understanding the origins and implications of the universal evolutionary process of ‘natural inclusion’ as *the fluid dynamic, co-creative transformation of all through all in receptive spatial context*. By the same token, it may also open up a new understanding of the evolutionary origins of gravity, electromagnetism, mass and heat – and ‘time’ as an implicit inclusion, not an independent arbiter, of natural energy flow as ‘place-time’ (Rayner, 2006; 2011). Amongst other things, the proposed ‘Higgs boson’ as a source of ‘mass’ may prove to be no more and no less than an intangible point or ‘zeroid’ (Shakunle & Rayner, 2008).

Einstein’s topographical depiction of gradients within a deformable space-time ‘fabric’ comes close to this visualization, but can’t reach it because it misses the ‘point’ in the core of ‘intra-space’, whose receptive gravitational influence extends everywhere, without limit. It misses the point because in conventional mathematics a point is regarded as a ‘singularity of matter’ - a ‘1’ alone, not a ‘singularity of space’ - a ‘zero’ included inescapably in ‘1’ included inescapably in a limitless intangible pool that cannot be cut into parts or defined as a whole.

Without gradients, without a receptive presence, there can be no flow – any potential energy ‘source’, with no ‘sink’ both in its core and in its neighbourhood, is definitively locked into itself as an absolute independent singleness. With gradients, flow – whether of bodily mass or electromagnetic radiation – has somewhere to *home* in on. But we can’t really understand ‘gradients’ or tangible responses to their inductive influence without including space throughout and beyond figure and figure in space. So long as we treat figures as discontinuous from space, we will be stuck looking for ineffable drivers and forces to move the world instead of finding the source of inductive influence that calls from everywhere within everything.

References

Einstein, A. (1954). *Relativity*. University Paper Back, Methuen & Co, London, p. 138.

Polanyi, M (1958). *Personal Knowledge: Towards a Post-Critical Philosophy*. London; Routledge and Kegan Paul. (p. 381)

Rayner, A.D.M. (2004). Inclusionality and the role of place, space and dynamic boundaries in evolutionary processes. *Philosophica*, **73**, 51-70.

Rayner, A.D.M. (2006). *Natural Inclusion: How to Evolve Good Neighbourhood*. Available from <http://www.inclusional-research.org/naturalinclusion.php>

Rayner, A.D.M. (2010a). Inclusionality and sustainability – attuning with the currency of natural energy flow and how this contrasts with abstract economic rationality. *Environmental Economics* **1**, 98-108.

Rayner, A.D.M. (2010b). Sustainability of the fitting– bringing the philosophical principles of natural inclusion into the educational enrichment of our human neighbourhood. <http://www.bestthinking.com>

Rayner, A.D.M. (2011). *NaturesScope: unlocking our natural empathy and creativity – an inspiring new way of relating to our natural origins and one another through natural inclusion*. O Books (in press).

Rayner, A. & Tattersall, P. (2010). From Field Theories to Pool Theory: the inclusional basis of natural physicality. Available from www.bestthinking.com.

Shakunle, L.O. (1994) *Spiral Geometry. The Principles (with Discourse)*. Hitit Verlag, Berlin, Germany.

Shakunle, L.O. & Rayner, A.D.M. (2008) Superchannel – Inside and beyond superstring: the natural inclusion of one in all - III. *Transfigural Mathematics* **1** (3), 9-55, 59-69

Shakunle, L.O., A.D.M.Rayner (2009). Transfigural foundations for a new physics of natural diversity – the variable inclusion of gravitational space in electromagnetic flow-form, *Journal of Transfigural Mathematics*, **1**(2), 109-122.

Valsiner, J. (2009). Baldwin's quest: a universal logic of development. In J.W. Clegg (Ed), *The Observation of Human Systems – Lessons From the History of Anti-Reductionist Empirical Psychology* (pp. 45-82). New Brunswick, London: Transaction Publishers.